

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A mechanical part of medium or small size made of steel derived from the ~~hot forging or the cold pressing thereof, of medium or small size,~~ and resulting from plastic transformation of a long siderurgical semiproduct, wherein ~~which the steel of which it is composed has:~~

a composition that, besides iron and the inevitable residual impurities resulting from processing of the steel, ~~corresponds at least to~~ comprises the following analysis elements, given in weight percentages:

0.2 <u>0.31</u>	≤	C	≤	0.5,
0.5 ≤ Mn	≤	2.0,		
0.05 ≤ V	≤	0.5,		
0.6 ≤ Si	≤	1.5,		
0.05 ≤ Cr	≤	1.0,		
0.01 ≤ Mo	≤	0.5, and		
0.02 ≤ S	≤	0.10,		

and optionally up to 50 ppm of boron, and wherein

a metallographic structure containing essentially acicular ferrite at least in the zones of mechanical stressing in tenacity and fatigue,

wherein the part is obtained from a long semiproduct derived from continuous casting and hot-rolling in the austenitic area, then formed by plastic deformation and treated thermally ~~in order to obtain a metallographic structure containing essentially acicular ferrite at least in the zones of mechanical stressing in tenacity and fatigue.~~

Claim 2 (Previously Presented): The mechanical part according to claim 1, wherein the steel further comprises from 0.01 to 0.02% titanium and/or up to 0.20% aluminum.

Claim 3 (Previously Presented): The mechanical part according to claim 1, wherein the steel further comprises between 5 and 30 ppm of calcium.

Claim 4 (Currently Amended): A steel for the manufacture of a mechanical part by plastic deformation, wherein, besides iron and the inevitable residual impurities resulting from processing of the steel, its chemical composition comprises at least, expressed in weight ~~content~~ percent:

$$\begin{array}{rclcl} 0.2 & \leq & C & \leq & 0.5, \\ 0.5 & \leq & \text{Mn} & \leq & 2.0, \\ 0.05 & \leq & V & \leq & 0.5, \\ 0.6 & \leq & \text{Si} & \leq & 1.5, \\ 0.05 & \leq & \text{Cr} & \leq & 1.0, \\ 0.01 & \leq & \text{Mo} & \leq & 0.5, \text{ and} \\ .02 & \leq & S & \leq & 0.10, \end{array}$$

and optionally up to 50 ppm of B, wherein the metallographic microstructure that the steel will have, once the part is implemented, is essentially composed of acicular ferrite at least in the zones of the part subjected to mechanical stressing in tenacity and fatigue.

Claim 5 (Currently Amended): The steel according to claim 4, wherein, ~~in order to protect the vanadium~~, the steel further comprises from 0.01 to 0.02 % titanium and/or up to 0.20% aluminum.

Claim 6 (Previously Presented): The steel according to claim 4, further comprising between 5 and 30 ppm of calcium.

Claim 7 (Currently Amended): A process for the manufacture of a mechanical part made of steel, wherein, for the purpose of obtaining acicular ferrite at least locally on the part, the process comprises ~~the following stages~~:

providing a continuous casting billet made of steel with a composition according to claim 4, which is hot-rolled at a temperature in excess of 1000° C into a bar or wire before being cooled to room temperature after rolling[[:]] , wherein

if the billet is hot-rolled into a wire, it is subjected ~~subjecting the wire~~ to a controlled cooling prior to formation into rings to obtain a metallographic structure composed essentially of acicular ferrite, which wire then is cut into pieces and cold-pressed into a finished part ready for use; and

if the billet is hot-rolled into a bar, it is subjected to cooling ~~the bar~~ naturally in the rolling heat area prior to cutting [[the]] said bar into pieces which then are hot-forged into a rough shape of a part that is cooled by controlled cooling to obtain a structure essentially composed of acicular ferrite at least in the stressed zones of the part, which rough shape then is machined, as need be, to the desired dimensions to make it into a finished part ready for use.

Claim 8 (Previously Presented): The process according to claim 7, wherein the controlled cooling is a natural cooling to room temperature.

Claim 9 (Previously Presented): The process according to claim 7, wherein the controlled cooling is a forced cooling ensuring a surface cooling speed of approximately 0.5 to 15° C/s.

Claim 10 (Currently Amended): A long, medium carbon siderurgical semiproduct, intended to be transformed by forge or by press into a mechanical part with high characteristics, of small size or of medium size, wherein, in order that the part may have a metallographic microstructure essentially composed of acicular ferrite at least in the zones of the part subjected to mechanical stressing in tenacity and fatigue, the steel that constitutes the part ~~corresponds at least to~~ comprises iron and the following ~~analysis elements~~, given in weight percentages:

0.2 <u>0.31</u>	≤	C	≤	0.5,
0.5	≤	Mn	≤	2.0,
0.05	≤	V	≤	0.5,
0.6	≤	Si	≤	1.5,
0.05	≤	Cr	≤	1.0,
0.01	≤	Mo	≤	0.5, and
0.02	≤	S	≤	0.10,

and optionally up to 50 ppm of boron, wherein the metallographic microstructure that it will have after transformation will be essentially composed of acicular ferrite at least in the zones of the part subjected to mechanical stressing in tenacity and fatigue.

Claim 11 (New) The steel according to Claim 1, wherein the Si content of the steel is in a range of 1.18 to 1.5 % in weight.

Claim 12 (New) The steel according to Claim 4, wherein the Si content of the steel is in a range of 1.18 to 1.5 % in weight.

Claim 13. (New) The steel according to Claim 10, wherein the Si content of the steel is in a range of 1.18 to 1.5 % in weight.

Claim 14. (New) The mechanical part according to Claim 1, wherein the steel comprises at least 60% of acicular ferrite by volume at least in the zones of the part subjected to mechanical stressing in tenacity and fatigue.

Claim 15. (New) The steel according to Claim 4, comprising at least 60% of acicular ferrite by volume at least in the zones of the part subjected to mechanical stressing in tenacity and fatigue.

Claim 16. (New) The semiproduct according to Claim 10, comprising at least 60% of acicular ferrite by volume at least in the zones of the part subjected to mechanical stressing in tenacity and fatigue after transformation.

Claim 17. (New) The mechanical part according to Claim 1, wherein the steel comprises at least 80% of acicular ferrite by volume at least in the zones of the part subjected to mechanical stressing in tenacity and fatigue.

Claim 18. (New) The steel according to Claim 4, comprising at least 80% of acicular ferrite by volume at least in the zones of the part subjected to mechanical stressing in tenacity and fatigue.

Claim 19. (New) The semiproduct according to Claim 10, comprising at least 80% of acicular ferrite by volume at least in the zones of the part subjected to mechanical stressing in tenacity and fatigue after transformation.